Saidur Rahman

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EXPERIENCE

CVS Health **Dallas, Texas**
Data Engineer *Feb 2023 - Present*
Working with innovation and optimization team to implement the strategy and roadmap to analyze big data (BigQuery) and enable machine learning feature pipeline in GCP (multi-tenancy). Also, collaborating with data science, marketing, and customer analytics teams to enable cloud resources for multiple lines of business using infrastructure as code and Terraform. **Tools:** GCP, Python, BigQuery, Jenkins, DAG, Spanner, Terraform, VertexAI Notebook, IAM

Meta (Facebook System Infrastructure) **Menlo Park, CA**
PhD Software Engineering Internship *May -August 2022*
- Facebook Instagram Video Reels bench-marking over RAN networks (worked on top 50 carriers data in North America and Asia Pacific region)
- Detect anomaly patterns from billions of users' reel experiences
- Developed lightweight client-side algorithm to detect anomaly and verified the accuracy of the algorithm using lab-generated label data
- Helped the team to develop a machine learning algorithm to detect network throttling, understand the behavior and effects of throttling.

Tools: Python, Presto (Big data SQL engine), Unit-Testing, ML Regression, Wireshark, Token-Bucket, Statistical Analysis

Montana State University **Bozeman, MT**
Graduate Research Assistant *Aug 2017 - December 2022*
- Realtime Edge framework for cognitive workload & physiological signal in Mixed Reality based Human Robot Interaction. We developed cognitive states between human-robot using Realtime Machine Learning, Mixed reality application and human physiological signal data deployed on Edge servers. | Web | Demo | Publications
  - Tools: Edge Cluster, Python, Real-Sense Camera, Universal Robot, BIOPAC sensors, Unity, Hololen 2
- Developed mobile and web applications for USMP project to manage slope information for geologists in National Park, Federal Highway Partners.
  - Tools: React Native, PHP, Realm, MySQL, AWS EC2 and S3 | Web | iOS | Android | Documentation

SKILLS

- **Programming Languages:** Python (5 years), C/C++ (4 years), Java, NodeJS, Bash
- **Databases & Other Technologies:** Redis, Google Cloud PubSub, Firebase, MongoDB, PostgresSQL, RethinkDB, Realm, MySQL, SQLlite, Cross Platform (Mac, Linux, Windows), Multi-Processing, Multi-Threading, Parallel Computation, System Design, API & Bash, Containerization, Virtualization, Mininet (SDN), Docker, Kubernetes, CRIU, Microservices, Amazon AWS (Lambda, EC2, SQS, S3, Greengrass, IoT), OpenGL, OpenCV

EDUCATION

Montana State University **Bozeman, MT, USA**
Ph.D. in Computer Science GPA: 3.87/4.0 *August 2017 - January 2023*

RESEARCH

My PhD research is focused on responsive user services in edge computing. The goal of my thesis is to develop a lambda based pipeline to manage limited resources in collaborative 5G and edge computing. I propose a caching mechanism to reduce the DNS roundtrip delay to locate the servers using 5G. I presented several techniques to implement task checkpointing, task checkpointing overhead prediction, and task migration to provide low latency and responsive services to mobile applications in collaborative 5g and Edge computing platform. I also show how the proposed techniques can manage the shared resources between mobile network and edge servers, utilize the available edge resource effectively and increase users' quality of experience.

SELECTED PUBLICATIONS

1. **Dynamic Checkpoint Initiation in Serverless MEC** *2022*
Saidur Rahman, Apostolos Kalatzis, Mike P. Wittie, Laura Stanley; Published in IEEE COINS 2022

2. **Short and Sweet Checkpoints for C-RAN MEC** *2021*
Saidur Rahman, Mike P. Wittie, Ahmed Elmokashfi, Laura Stanley, Stacy Patterson, David L. Millman; Published in IEEE Cloud Summit 2021

ACHIEVEMENT

NSDI 2020 Student Travel Grant, BD-Sweden Trust Higher Study Travel Grant 2019